

AMENDMENTS TO THE CLAIMS

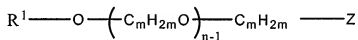
This listing of claims will replace all prior versions, and listings, of claims in the International application:

Listing of Claims:

1. (Previously Presented) A method of dispersing aqueous suspensions of solids, the method comprising:

blending block copolymers with an aqueous suspension of solids, the suspension of solids including hydraulic binders which include materials selected from the group consisting of cement, lime, gypsum, anhydrite and mixtures thereof,

wherein the block copolymers are prepared by reacting a poly(alkylene oxide) compound of the general formula (I)



(I)

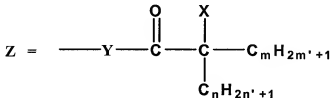
in which

$R^1 =$ hydrogen, a $C_1 - C_{20}$ -alkyl radical, a cycloaliphatic $C_3 - C_{12}$ -cycloalkyl radical, an optionally substituted $C_6 - C_{14}$ -aryl radical;

$m = 2$ to 4 ;

$n = 1$ to 250 ;

and Z is selected from the group of formulas III, IV, and V



(III)

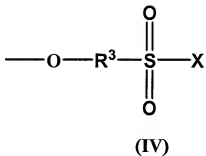
where Y = O or NR²

R² = H, a C₁-C₁₂-alkyl radical, a C₆-C₁₄-aryl radical, or $\text{---C}_m\text{H}_{2m}(\text{O---C}_m\text{H}_{2m})_{n-1}\text{OR}^1$

X = Cl or Br

m' = 1 to 4

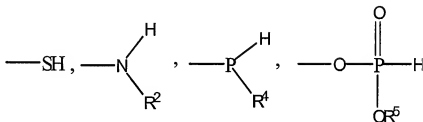
n' = 0 to 2,



where

R³ = an optionally substituted C₆-C₁₄-arylene radical

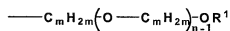
X = Cl or Br,



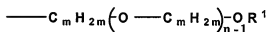
(V)

in which

R^4 is H, a C_1 - C_{12} alkyl radical, a C_3 - C_8 -cycloalkyl radical, a C_6 - C_{14} -aryl radical, optionally substituted by hydroxyl, carboxyl or sulfo groups, or

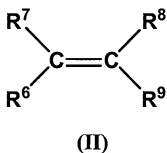


and R^5 is C_1 - C_{12} alkyl, C_6 - C_{14} -aryl, or



and R^1 , R^2 , m and n have the abovementioned meaning,

with an ethylenically unsaturated monomer compound of the general formula (II) in a free radical, anionic or cationic polymerization



in which

R⁶ and R⁷ may be H, CH₃, COOH or salts thereof, COOR¹⁰, CONR¹⁰R¹⁰

R⁶ and R⁹ together may be O-CO-O

R⁸ may be H, CH₃ or -CH₂-COOR¹⁰

R⁹ may be COOR¹⁰, an optionally substituted C₆-C₁₄-aryl radical or OR¹¹

R¹⁰ may be H, C₁-C₁₂-alkyl, C₁-C₁₂-hydroxyalkyl,

R¹¹ may be acetyl, and

R¹, m and n have the abovementioned meaning.

2. (Cancelled)

3. (Previously Presented) The method as claimed in claim 1, wherein the reaction of the poly(alkylene oxide) compound with the monomer compound is carried out in the form of a free radical polymerization.

4. (Previously Presented) The method as claimed in claim 3, wherein the reaction is effected in the form of an atom transfer radical polymerization.

5. (Previously Presented) The method as claimed in claim 1, wherein the aryl radicals for R¹ are also substituted by hydroxyl, carboxyl and sulfo groups.

6. (Previously Presented) The method as claimed in claim 1, wherein in formula (I), m is 2 or 3 and n is 5 to 250.

7. (Previously Amended) The method as claimed in claim 1, wherein R² is hydrogen or C₁-C₂-alkyl radical.

8. (Previously Presented) The method as claimed in claim 1, wherein m' is 1 and n' is 0 or 1.

9. (Previously Presented) The method as claimed in claim 1, wherein the arylene radical R^3 also has halo, hydroxyl, C_1-C_{12} -alkoxy, C_1-C_{12} -dialkylamino or carboxyl groups.

10. (Previously Presented) The method as claimed in claim 1, wherein R^6 and R^7 are H, R^6 and R^9 together are O-CO-O, R^8 is H, CH_3 or CH_2COOR^{10} and R^9 is $COOR^{10}$ or is a phenyl radical optionally substituted by hydroxyl, carboxyl or sulfo groups.

11. (Previously Presented) The method as claimed in claim 10, wherein R^6 and R^7 are H, R^8 = H or CH_3 and R^9 = $COOR^{10}$.

12. (Previously Presented) The method as claimed in claim 11, wherein R^6 and R^7 are H, R^8 = H or CH_3 and R^9 is $COOH$ or salts thereof or $COOR^{12}$, where R^{12} is tert-butyl or C_1-C_6 -hydroxyalkyl.

13. (Previously Presented) The method as claimed in claim 1, wherein the reaction of the poly (alkylene oxide) compound and the monomer compound is carried out in the presence of a inimer compound.

14. (Previously Presented) The method as claimed in claim 13, wherein the inimer compound is prepared by esterification of hydroxy-functionalized monomers with ATRP initiators.

15. (Previously Presented) The method as claimed in claim 13, wherein the inimer compound is prepared by sulfochlorination of styrene.

16. (Previously Presented) The method as claimed in claim 1, wherein the reaction is effected in the temperature range from 20 to 110°C.

17. (Previously Presented) The method as claimed in claim 1, wherein the block copolymers are used in an amount of 0.01 to 5% by weight, based on the suspension of solids.

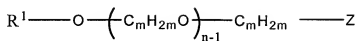
18. (Previously Presented) The method as claimed in claim 17, wherein the suspension of solids further includes inorganic particles selected from the group consisting of crushed rock, silicate powder, chalk, clays, porcelain slip, talc, pigments and carbon black.

19. (Previously Presented) The method as claimed in claim 17, wherein the suspension of solids contains organic particles.

20. (Previously Presented) A method of superplasticizing aqueous suspensions of solids, the method comprising:

blending block copolymers with an aqueous suspension of solids to superplasticize the suspension of solids, the suspension of solids including hydraulic binders which include materials selected from the group consisting of cement, lime, gypsum, anhydrite and mixtures thereof,

wherein the block copolymers are prepared by reacting a poly(alkylene oxide) compound of the general formula (I)



(I)

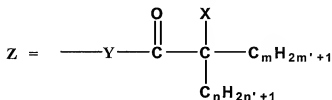
in which

$R^1 =$ hydrogen, a $C_1 - C_{20}$ -alkyl radical, a cycloaliphatic $C_3 - C_{12}$ -cycloalkyl radical, an optionally substituted $C_6 - C_{14}$ -aryl radical;

$m = 2$ to 4 ;

$n = 1$ to 250 ;

and Z is selected from the group of formulas III, IV, and V



(III)

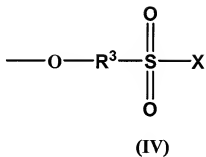
where $Y = O$ or NR^2

$R^2 =$ H, a $C_1 - C_{12}$ -alkyl radical, a $C_6 - C_{14}$ -aryl radical, or $\text{---C}_m\text{H}_{2m}(\text{O---C}_m\text{H}_{2m})_{n-1}\text{OR}^1$

$X = Cl$ or Br

$m' = 1$ to 4

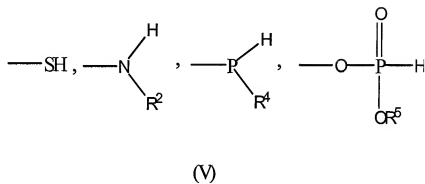
$n' = 0$ to 2 ,



where

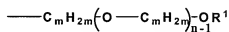
R^3 = an optionally substituted $\text{C}_6\text{--C}_{14}$ -arylene radical

X = Cl or Br,

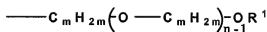


in which

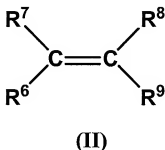
R^4 is H, a $\text{C}_1\text{--C}_{12}$ alkyl radical, a $\text{C}_5\text{--C}_8$ -cycloalkyl radical, a $\text{C}_6\text{--C}_{14}$ -aryl radical, optionally substituted by hydroxyl, carboxyl or sulfo groups, or



and R^5 is C_1 - C_{12} alkyl, C_6 - C_{14} -aryl, or



and R^1 , R^2 , m and n have the abovementioned meaning,
 with an ethylenically unsaturated monomer compound of the general formula (II) in a free radical, anionic or cationic polymerization



in which

R^6 and R^7 may be H, CH_3 , COOH or salts thereof, $COOR^{10}$, $CONR^{10}R^{10}$

R^6 and R^9 together may be O-CO-O

R^8 may be H, CH_3 or $-CH_2-COOR^{10}$

R^9 may be $COOR^{10}$, an optionally substituted C_6 - C_{14} -aryl radical or OR^{11}

R^{10} may be H, C_1 - C_{12} -alkyl, C_1 - C_{12} -hydroxyalkyl,

R^{11} may be acetyl, and

R^1 , m and n have the abovementioned meaning.

21. (Cancelled)

22. (Previously Presented) The method as claimed in claim 20 wherein the reaction of the poly(alkylene oxide) compound with the monomer compound is carried out in the form of a free radical polymerization.

23. (Previously Presented) The method as claimed in claim 22, wherein the reaction is effected in the form of an atom transfer radical polymerization.

24. (Previously Presented) The method as claimed in claim 20, wherein the aryl radicals for R^1 are also substituted by hydroxyl, carboxyl and sulfo groups.

25. (Previously Presented) The method as claimed in claim 20, wherein in formula (I), m is 2 or 3 and n is 5 to 250.

26. (Previously Presented) The method as claimed in claim 20, wherein that R^2 is hydrogen or C_1-C_2 -alkyl radical.

27. (Previously Presented) The method as claimed in claim 20, wherein m' is 1 and n' is 0 or 1.

28. (Previously Presented) The method as claimed in claim 20, wherein the arylene radical R^3 also has halo, hydroxyl, C_1-C_{12} -alkoxy, C_1-C_{12} -dialkylamino or carboxyl groups.

29. (Previously Presented) The method as claimed in claim 20, wherein R^6 and R^7 are

H, R⁶ and R⁹ together are O-CO-O, R⁸ is H, CH₃ or CH₂COOR¹⁰ and R⁹ is COOR¹⁰ or is a phenyl radical optionally substituted by hydroxyl, carboxyl or sulfo groups.

30. (Previously Presented) The method as claimed in claim 29, wherein R⁶ and R⁷ are H, R⁸ = H or CH₃ and R⁹ = COOR¹⁰.

31. (Previously Presented) The method as claimed in claim 30, wherein R⁶ and R⁷ are H, R⁸ = H or CH₃ and R⁹ is COOH or salts thereof or COOR¹², where R¹² is tert-butyl or C₁-C₆-hydroxyalkyl.

32. (Previously Presented) The method as claimed in claim 20, wherein the reaction of the poly (alkylene oxide) compound and the monomer compound is carried out in the presence of a inimer compound.

33. (Previously Presented) The method as claimed in claim 32, wherein the inimer compound is prepared by esterification of hydroxy-functionalized monomers with ATRP initiators.

34. (Previously Presented) The method as claimed in claim 32, wherein the inimer compound is prepared by sulfochlorination of styrene.

35. (Previously Presented) The method as claimed in claim 20, wherein the reaction is effected in the temperature range from 20 to 110°C.

36. (Previously Presented) The method as claimed in claim 20, wherein the block copolymers are used in an amount of 0.01 to 5% by weight, based on the suspension of solids.

37. (Previously Presented) The method as claimed in claim 36, wherein the suspension of solids further includes inorganic particles selected from the group consisting of crushed rock, silicate powder, chalk, clays, porcelain slip, talc, pigments and carbon black.

38. (Previously Presented) The method as claimed in claim 36, wherein the suspension of solids contains organic particles.